



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/535,550	05/18/2005	Reinhard Mcier	DE02 0272 US	7707
65913	7590	11/02/2007		
NXP, B.V. NXP INTELLECTUAL PROPERTY DEPARTMENT M/S41-SJ 1109 MCKAY DRIVE SAN JOSE, CA 95131			EXAMINER RICE, ELISA M	
			ART UNIT 2624	PAPER NUMBER
			NOTIFICATION DATE 11/02/2007	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

<b>Office Action Summary</b>	Application No. 10/535,550	Applicant(s) MEIER, REINHARD	
	Examiner Elisa M. Rice	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>05/18/2005</u> | 6) <input type="checkbox"/> Other: ____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yau et al. (US 6,876,757 B2) and Tico et al.

**Regarding claim 1**, Yau discloses a method of determining the region of interest in images of skin impressions, the skin having ridges and valleys and the images taking the form of image data (Yau, column 3, line 24-27), values within a first value range being assigned to the ridges and values within a second value range of the image data being assigned to the valleys (column 5, line 39-43), characterized in that the values of the overall image are shifted in the direction of the first value range (column 5, line 1-12), in that the overall image is divided into tiles (column 4, line 10-11; Fig. 12, 1204), in that mean values of the values for the individual tiles are compared with a reference value ("predetermined mean threshold", column 4, line 34-40) and in that those tiles whose mean value deviates relative to the reference value in the direction of the first value range (above

Art Unit: 2624

the reference value) are considered at least on a preliminary basis as belonging to the region of interest.

Yau does not disclose performing the directional shifting before computing the preliminary region of interest.

Tico, however, performs directional shifting before computing the preliminary region of interest (Tico, section 3.2.2).

It would have been obvious to one of ordinary skill in the art to modify the fingerprint extraction system of Yau with the method of performing directional shifting on the image data before computing the preliminary region of interest as taught for the reason articulated by Tico in section 3.2.2 below:

“Due to various type of noises caused by e.g., scars, over-inking, under-inking, excessively worn prints, etc. the gray level along ridge and valley lines exhibits important irregularities. A scar, for example, would determine the interruption of several ridges, and hence several false ridges endings to be detected. On the other hand regions where the pressure between the finger and the platen was too high (over-inking), or too low (under-inking) become smudgy exhibiting an almost constant gray level without a clear difference between neighborhood ridge and valley lines. An image enhancement step is therefore required in order to improve the fingerprint image.”

**Regarding claim 3**, the combination of Yau and Tico discloses a method as claimed in claim 1, characterized in that, for the tiles not yet deemed to belong to the region of interest, the variance of the gray scale values within each tile in the unchanged image data is calculated and in that an evaluation of these tiles is effected as a function of the mean value, the variance and a reference value in such a way that a difference between the mean value and the reference value, which in itself indicates lack of belonging to the region of interest, may be compensated by an appropriately large variance and a difference which indicates belonging to the region of interest may be compensated by an appropriately small variance (Yau, column 4, line 32-35).

**Regarding claim 4**, the combination of Yau and Tico discloses a method as claimed in claim 3, characterized in that each tile is then examined as to whether more than five or fewer than six of the tiles surrounding it have been assessed as belonging to the region of interest, wherein in the case of more than five the examined tile is assessed as belonging to the region of interest and in the case of fewer than six the examined tile is assessed as not belonging to the region of interest (Yau, column 4, line 34-38).

**Regarding claim 5**, the combination of Yau and Tico discloses a method as claimed in claim 4, characterized in that the step as claimed in claim 3 is repeated three times

Art Unit: 2624

(Yau, column 4, line 40-47). Yau repeats the process only two times but Examiner takes office notice in saying it would have been obvious to anyone of ordinary skill in the art to iterate more to improve accuracy.

**Regarding claim 6**, the combination of Yau and Tico discloses a method as claimed in claim 5, characterized in that the hitherto determined region of interest is investigated for "inlets" and in that tiles lying in "inlets" are assumed to belong to the region of interest (Yau, column 10, line 3-59, Fig 11, num. 1118; Fig. 10, num. 1014 and 1016, column 3, line 27-31). Singularities are assumed to be fingerprint minutia.

**Regarding claim 7**, the combination of Yau and Tico discloses a method as claimed in claim 6, characterized in that, on each side of the hitherto determined region of interest, pointers starting from both ends of the side are in each case positioned on the outermost tile determined as belonging to the region of interest, wherein the pointers travel towards one another and row by row adopt the position of a tile lying further outwards or retain the same position in the case of an "inlet" and in that the path of the pointers until the pointers meet forms the respective border of the final region of interest (Yau, column 5, line 60- column 6, line 8).

Art Unit: 2624

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yau et al. (US 6,876,757 B2) and Tico as applied to claim 1 above, and further in view of Miyatake et al. (US 6798908 B2).

**Regarding claim 2**, while Yau discloses a method as claimed in claim 1, Yau does not disclose a method characterized in that, to shift the values, each tile is split into a plurality of groups of pixels distributed extensively uniformly over the tiles, in that, for each tile and each group, the minimum of the corresponding values is formed, in that, for each tile, the mean value is calculated by means of the minimum values of the groups and in that the mean value is stored as a property of the respective tile.

Miyatake teaches a method characterized in that, to shift the values, each tile is split into a plurality of groups of pixels distributed extensively uniformly over the tiles, in that, for each tile and each group, the minimum of the corresponding values is formed, in that, for each tile, the mean value is calculated by means of the minimum values of the groups and in that the mean value is stored as a property of the respective tile (column 8, line 27-31).

It would have been obvious to one of ordinary skill in the art to modify the fingerprint extraction system of Yau with the method of using the minimum mean as the value for each tile as taught by Miyatake in order to perform image/ridge enhancement.

**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elisa M. Rice whose telephone number is (571)270-1582. The examiner can normally be reached on 8:00a.m.-5:30p.m. EST Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian P. Werner can be reached on (571)272-7401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Elisa Rice *ER 10/29/2007*  
Patent Examiner  
2624

EMR

  
BRIAN WERNER  
SUPERVISORY PATENT EXAMINER